

WHAT IS CLAIMED IS:

1. A method for predictive recognition of errors in a manufacturing system, said method comprising the steps of:

5 archiving a plurality of error patterns that previously occurred in the manufacturing system, the archived error patterns created by statistical methods; monitoring manufacturing system data in real-time; and comparing the monitored data with the archived error patterns in real-time to predict imminent errors likely to occur in the manufacturing system.

10

2. A method according claim 1, wherein the archived error pattern containing compressed information.

3. A method according claim 2, wherein the compressed information for the archived
15 error patterns is achieved by statistical methods or data mining mechanisms.

4. A method according claim 1, wherein the comparing of the data is performed by data mining mechanisms.

20 5. The method according to claim 1, wherein the archived error patterns are automatically built by the monitored data using statistical methods or data mining mechanisms.

6. The method according to claim 1, wherein the monitored data are pre-specified data.
7. The method according to claim 6, wherein the pre-specified data are minimized using structural information of the manufacturing system.

5

8. A method according claim 1, further comprising storing the monitored data in a ring-puffer.

9. A method according claim 1, wherein the monitored data are automatically read out
10 components of the manufacturing system.

10. A method according to claim 1, further comprising triggering corrective actions.

11. A method according to claim 1, wherein the method is adapted for discrete or
15 continuous or batch processes.

12. A computerized system for predictive recognition of errors in a manufacturing system, comprising:

20 a mechanism for archiving a plurality of error patterns that previously occurred in the manufacturing system, the archived error patterns created by statistical methods;

a mechanism for monitoring manufacturing system data in real-time; and

a mechanism for comparing the monitored data with the archived error patterns in real-time to predict imminent errors likely to occur in the manufacturing system.

5 13. A system according claim 12, wherein the comparing of the data is performed by data mining mechanisms.

14. A system according to claim 12, wherein the archived error patterns are automatically built by the monitored data using statistical methods or data mining mechanisms.

10

15. A system according to claim 12, wherein the monitored data are pre-specified data.

16. A device for predictive recognition of errors in a manufacturing system, comprising:

15 a mechanism for archiving a plurality of error patterns that previously occurred in the manufacturing system, the archived error patterns created by statistical methods;

a mechanism for monitoring manufacturing system data in real-time; and

20 a mechanism for comparing the monitored data with the archived error patterns in real-time to predict imminent errors likely to occur in the manufacturing system.

17. A device according to claim 16, wherein the device is a dedicated unit in a manufacturing environment.

18. A device according to claim 16, wherein the device is a decentral net component.

19. A device according to claim 16, wherein the device is a field device.

5

20. A device according to claim 16, wherein the device is a PLC.

10